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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,767	02/21/2006	James Frank Brazdil	608476	6658
23117 7590 04/30/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
BERNS, DANIEL J				
ART UNIT		PAPER NUMBER		
1793				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/568,767

**Applicant(s)**

BRAZDIL ET AL.

**Examiner**

DANIEL BERNIS

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-47, 49-52, 54 and 56-64 is/are pending in the application.
- 4a) Of the above claim(s) 63-84 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-47, 49-52, 54 and 56-62 is/are rejected.
- 7) ☒ Claim(s) 49 and 62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims 63-84 drawn to an invention nonelected without traverse in the reply filed on 8/25/08. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Objections***

3. Claim 49 is objected to because of the following informalities: as currently written, claim 49 depends from itself, which is an impossibility. For examination purposes, this claim has been interpreted as depending from claim 43. Should a different interpretation thereof be desired, applicant must explicitly so state in replying to this Office Action. Appropriate correction is required.
4. Claim 62 is objected to because of the following informalities: as currently written, claim 62 alternately depends from cancelled claim 48, which is an impossibility. For examination purposes, this claim has been interpreted as depending solely from claim 43. Should a different interpretation thereof be desired, applicant must explicitly so state in replying to this Office Action. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 49 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 49 recites the limitation "Sb[.]" There is insufficient antecedent basis for this limitation in the claim, under the interpretation that claim 49 depends from claim 43.

Claim 57 recites the limitation "the metal oxide[.]" There is insufficient antecedent basis for this limitation in the claim, as currently amended to depend from claim 43. This rejection would be obviated if claim 57 depended from claim 56 as originally written.

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. In considering the obviousness rejections below, the applicant should note that the person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in the application reasonably reflect this level of skill.

11. Claims 43-47, 49-52, 54, and 56-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al., US 4,250,346 (1981) ("Young"). Regarding claims 43-46, Young discloses a catalyst composition for the oxidation of ethane comprising a silica, alumina, SiC, zirconia, or titania support (or mixtures thereof), *see id.* at col. 3, ln. 44-46, and a catalyst of general formula  $Mo_aX_bY_c$ , where X is one or more of Cr, Mn, Nb, Ta, Ti, V and/or W, Y is one or more of Bi, Ce, Co, Cu, Fe, K, Mg, Ni, P, Pb, Sb, Si, Sn, Tl and/or U, and where "a" equals 1, "b" equals 0.05-1.0, and "c" equals 0-2, a-c being the gram atom ratios of their respective elements. *See id.* at abstract; col. 2, ln. 21-24 and 41-60; clm. 1. The above elements are present as the respective oxides. *See id.* at col. 2, ln. 67 to col. 3, ln. 3. As the disclosed ranges fall within or substantially overlap those claimed, the claimed ranges are rendered *prima facie* obvious thereby. *See, e.g., In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); MPEP 2144.05. While it is noted that none of Young's specific examples consist of Mo, V, Nb, at least one of Ge, Sn, and/or Pb, optionally W, and optionally one or more of Cr, Mn, Ta, B, Al, Ga, In,

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Pt, Zn, Cd, Bi, Ce, Co, Rh, Ir, Cu, Ag, Fe, Ru, Os, K, Rb, Cs, Mg, Ca, Sr, Ba, Ni, P, Si, Ti, U, Re, La, Ta, Hf and/or Zr, it nevertheless would have been obvious to one of ordinary skill in the art at the time the invention was made to select such a composition in the claimed gram atom ratio ranges from Young's acceptable elements and ratios list, such as  $\text{Mo}_1\text{Sn}_{0.05-2}\text{V}_{0.05-1}\text{Nb}_{0.05-1}$ ,  $\text{Mo}_1\text{Pb}_{0.05-2}\text{V}_{0.05-1}\text{Nb}_{0.05-1}$ , or the like. *See Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 335, 65 USPQ 297, 301 (1945) ("Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle."); MPEP 2144.07.

Regarding claim 47, Young contemplates employing Sn within its catalyst composition. *See id.* at col. 2, ln. 50. *Sinclair & Carroll Co.*; MPEP 2144.07.

Regarding claims 49-51, Young contemplates employing such elements as Bi, Ce, Cu, K, P, and/or Ti within its catalyst composition, with Ce being especially preferred. *See id.* at col. 2, ln. 48-51. *Sinclair & Carroll Co.*; MPEP 2144.07.

Regarding claim 52, Young contemplates a catalyst composition such as  $\text{Mo}_6\text{Ti}_5\text{V}_5\text{Nb}_5\text{Sn}_c$ . *See id.* at col. 2, ln. 46-50. *Sinclair & Carroll Co.*; MPEP 2144.07.

Regarding claim 54, Young contemplates employing such elements as Cr, Mn, Ta, Bi, Ce, Co, Cu, Fe, K, Mg, Ni, P, Si, Ti, U, and/or Ti within its catalyst composition in gram atom ratios of 0-2, preferably between 0.05-1. *See id.* at col. 2, ln. 46-55. As Young's ranges fall within or substantially overlap that claimed, the latter is rendered *prima facie* obvious thereby. *In re Wertheim*; MPEP 2144.05.

Regarding claims 56-59, Young employs metal oxide supports such as silica, alumina, titania, zirconia, non-oxide supports such as SiC, or mixtures thereof for its catalyst composition.

*See id.* at col. 3, ln. 44-46. Selecting a support from this list would have been obvious to one of ordinary skill in the art at the time the invention was made. *Sinclair & Carroll Co.*; MPEP 2144.07.

Regarding claims 60-61, Young's selection of supports and the respective wt. % values of catalyst (10-50 wt. %) and support (the remainder, 50-90 wt. %) also render the claimed values *prima facie* obvious. *See id.* at col. 3, ln. 47-49. *In re Wertheim*, MPEP 2144.05.

Regarding claim 62, Young's support materials may comprise Al, Ti, and/or Zr, and its catalyst composition may comprise Ti. *See id.* at col. 2, ln. 46-48 and col. 3, ln. 44-46. Given Young's lists of appropriate support materials and catalyst component elements, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select materials such as the above therefor. *Sinclair & Carroll Co.*; MPEP 2144.07.

### ***Response to Arguments***

12. Applicant's 1/28/09 arguments regarding rejections based upon Komada et al., Pre-grant Pub. No. US 2003/0088118 ("Komada"), McCain et al., EP 0294846 ("McCain-EP"), and Ellis, WIPO Pub. No. WO 03/033138, have been fully considered and are persuasive, especially in light of applicant's 1/28/09 amendments to claim 1 (i.e., the exclusion of Sb and Au from the claimed catalyst composition). The rejections under 35 U.S.C. 102 and 103 based upon Komada, McCain-EP, and Ellis have been withdrawn.

13. Applicant's 1/28/09 arguments regarding rejections based upon Young under 35 U.S.C. 102 have been fully considered and are persuasive- none of Young's specifically-exemplified compositions contain Mo, V, Nb, oxygen, and one or more of Ge, Sn, and/or Pb as required by claim 43. The rejections under 35 U.S.C. 102 over Young have been withdrawn.

14. Applicant's 1/28/09 arguments filed regarding rejections based upon Young under 35 U.S.C. 103 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that "the inclusion of one or more of Ge, Sn or Pb in a catalyst additionally consisting of Mo, V, Nb, optionally W and optionally Y would enable improved selectivity to acetic acid and ethylene and reduced molar ratio of ethylene to acetic acid in the oxidation of ethane, and optionally ethylene") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *See In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

#### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the advisory action's mailing date. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL BERNIS whose telephone number is (571)270-5839. The examiner can normally be reached on Monday thru Thursday, 9AM-6PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached at (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. B./ April 22, 2009  
Examiner, Art Unit 1793

/Stuart Hendrickson/  
Primary Examiner, Art Unit 1793